A SIMPLE PULMONARY VENTILATION CHART FOR USE IN INTENSIVE (CONSTANT) CARE UNITS, RESPIRATORY UNITS, OR RECOVERY ROOMS

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IT has become apparent that there is a need for a visual record of the changing blood gas values in patients who have respiratory problems, particularly those patients dependent on mechanical ventilation. Such a

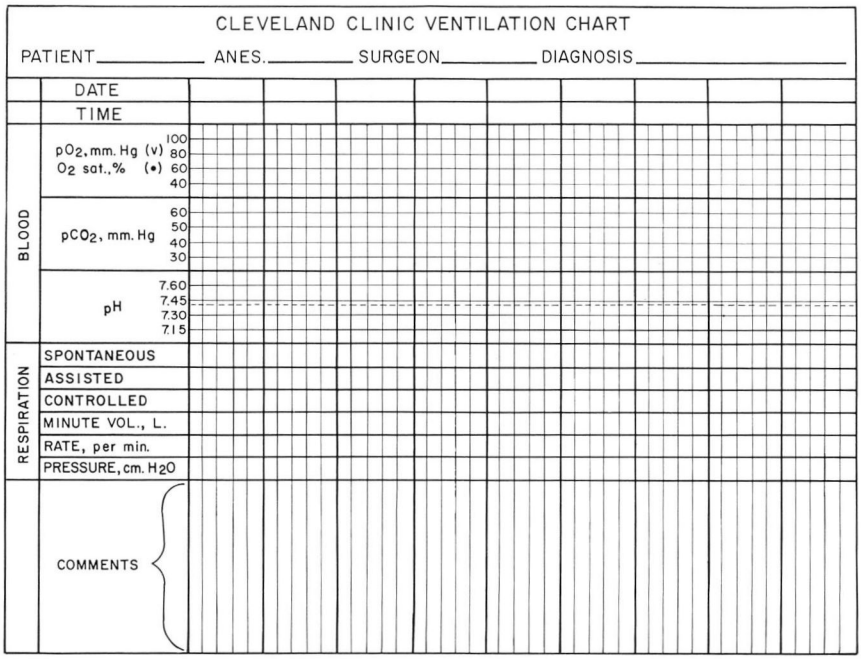

Fig. 1. Ventilation chart on which to record postoperative status and progress of the patient with respiratory problems.

chart has the following advantages in intensive care units, respiratory units, or recovery rooms. (1) It enables the physician to follow the progress of patients and to observe changes in ventilatory state and requirements. (2) It aids the physician in making the evaluation of the postoperative physio-

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logic status, especially of the patient who has undergone cardiac surgery. (3) It serves as a guide in the transition from controlled or assisted to spontaneous respiration. (4) It provides incidental information with regard to the acid-base status, which is of the utmost importance.

The chart (*Fig. 1*) has been specifically designed to meet the needs of the Cleveland Clinic Hospital, but it is adaptable to any institution with facilities for performing blood gas measurements. At the Cleveland Clinic Hospital these studies are made whenever they are indicated, hence the provision for recording the date and time. The range of values for oxygen pressure (pO_2), oxygen saturation (O_2), carbon dioxide pressure (pCO_2) and the measure of alkalinity and acidity (pH) is considered wide enough for the majority of clinical requirements.

Different symbols are used to denote whether pO_2 or O_2 saturation was directly measured, rather than derived one from the other. Spaces are

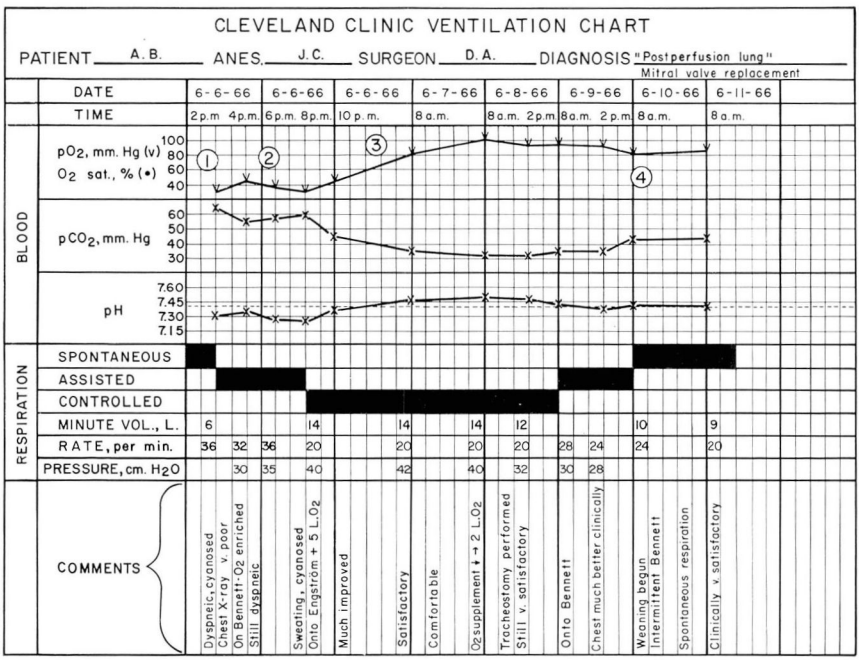

Fig. 2. Ventilation chart filled in. Points to be noted (indicated by encircled numbers): (1) The inadequacy of spontaneous respiration as evidenced by the low pO_2 and the elevated pCO_2. (2) Some improvement as a result of respiratory assistance by means of a Bennett respirator; but this was not sufficient as is shown by the blood gas values, rising respiratory rate, and rising pressure reading on the machine. (3) Notable improvement when respiration is controlled by the Engström ventilator. (4) A relatively smooth transition from controlled to assisted to spontaneous respiration, monitored biochemically in conjunction with the clinical impression.

provided for the blood gas values and pH and for indication of the status of respiration (spontaneous, assisted, or controlled), minute volume, rate, and pressure.

These data can be charted by the nurse in charge of the patient, who has been taught how to measure and to record the minute volume, the respiratory rate, and the pressure registered by the gauge on the ventilator.

Finally, perhaps the most important column on this chart is that for commenting on the actual clinical state of the patient, e.g., distressed, cyanosed, sweating, comfortable. Because of space limitation these must be written in a vertical direction. The completed chart in *Figure 2* illustrates a typical purely respiratory problem uncomplicated by metabolic acid-base imbalance.

Acknowledgment

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